



7/A
Seq. listing

<110> Joy, Gerald F.
Breaker, Ronald R.

<120> ENZYMATIC DNA MOLECULES

<130> SCR2190S

<140> 09/423,035

<141> 2000-01-13

<150> PCT/US98/08677

<151> 1998-04-29

<150> 60/045,228

<151> 1997-04-29

<160> 131

<170> PatentIn Ver. 2.1

<210> 1

<211> 15

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<223> Description of Artificial Sequence: 3' terminal
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<223> Description of Combined DNA/RNA Molecule: The N
at position 8 is adenosine ribonucleotide.

<220>

<223> Description of Artificial Sequence: substrate

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tcactatnag gaagagatgg

20

<210> 3

<211> 38

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 3

acacatctct gaagtagcgc cgccgtatag tgacgcta

38

<210> 4

<211> 80

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: oligomer

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gtgccaagct taccgnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60
nnnnngtcgc catctcttcc 80

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<211> 28

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<220>

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<223> Description of Artificial Sequence: cleavage
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28

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<223> Description of Combined DNA/RNA Molecule: The n
at position 28 is adenosine ribonucleotide.

<220>

<223> Description of Artificial Sequence: primer

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28

<210> 7

<211> 19

<212> DNA

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<223> Description of Combined DNA/RNA Molecule: The n
at position 8 is adenosine ribonucleotide.

<220>

<223> Description of Artificial Sequence: substrate

<400> 7

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19

<210> 8

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<221> misc_feature

<222> (8)

<223> The n at position 8 is adenosine nucleotide.

<220>

<223> Description of Artificial Sequence: template

<400> 8

tcactatn

8

<210> 9

<211> 30

<212> DNA

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<223> Description of Artificial Sequence: template

<400> 9

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30

<210> 10

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<220>

<223> Description of Artificial Sequence: primer

<400> 10

gtgccaagct taccg

15

<210> 11

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 11

ctgcagaatt ctaatacgac tcactatagg aagagatggc gac

43

<210> 12

<211> 19

<212> DNA

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<223> Description of Combined DNA/RNA Molecule: The n
at position 8 is adenosine ribonucleotide.

<220>

<223> Description of Artificial Sequence: substrate

<400> 12

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19

<210> 13

<211> 43

<212> DNA

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<223> Description of Combined DNA/RNA Molecule: The n
at position 28 is adenosine ribonucleotide.

<220>

<223> Description of Artificial Sequence: fixed
substrate

<400> 13

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43

<210> 14

<211> 50

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme
domain

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50

<210> 15

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme
domain

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50

<210> 16
<211> 50
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme
domain

<400> 16
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<210> 17
<211> 50
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme
domain

<400> 17
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<210> 18
<211> 50
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme
domain

<400> 18
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<210> 19
<211> 50
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<223> Description of Artificial Sequence: DNA enzyme

domain

<400> 19

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50

<210> 20

<211> 50

<212> DNA

<213> Artificial Sequence

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domain

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<210> 21

<211> 50

<212> DNA

<213> Artificial Sequence

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<210> 22

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme
domain

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<210> 23

<211> 107

<212> DNA

<213> Artificial Sequence

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<223> Description of Combined DNA/RNA Molecule: The n
at position 28 is adenosine ribonucleotide.

<220>

<223> Description of Artificial Sequence: oligomer

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gggacgaatt ctaatacgac tcactatngg aagagatggc gacatctcnn nnnnnnnnnn 60
nnnnnnnnnn nnnnnnnnnn nnnnnnnngt gacggttaagc ttggcac 107

<210> 24

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 24

ccgcccacct cttttacgag cctgtacgaa atagtgtctt tgttagtat 49

<210> 25

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 25

tctcttcagc gatgcacgct tgttttaatg ttgcacccat gttagtga 48

<210> 26

<211> 46

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 26

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<210> 28
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 <400> 28
 ccgcccacct cttttacgag cctgtacgaa atagtgttct cgtagtat 49

<210> 29
 <211> 48
 <212> DNA
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 <220>
 <223> Description of Artificial Sequence: DNA enzyme

 <400> 29
 tctcagactt agtccatcac actctgtgca tatgcctgct tgatgtga 48

<210> 30
 <211> 42
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: DNA enzyme

 <400> 30
 ctctcatctg ctacgacgct cgaatagtgt cagtcgatgt ga 42

<210> 31
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 <223> Description of Artificial Sequence: DNA enzyme

 <400> 31
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 <210> 36
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 <400> 36
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 <210> 37
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 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: DNA enzyme

 <400> 37
 atcagcgatt aacgcttatt ttagcggtac acccatgtta 40

 <210> 38
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 <223> Description of Artificial Sequence: DNA enzyme

 <400> 38
 atcagcgatt aacgcttggt ttagtggtgc acccatgtta 40

<210> 39
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<213> Artificial Sequence

<220>
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binding region

<400> 40
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<210> 41
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binding region

<400> 41
ctctatttct 10

<210> 42
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<220>
<223> Description of Artificial Sequence: substrate
binding region

<400> 42
tatgtgacgc ta

12

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binding region

<400> 43
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binding region

<400> 44
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11

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binding region

<400> 45
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13

<210> 46
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<223> Description of Artificial Sequence: substrate
binding region

<400> 46

aatagtgaag tggt

14

<210> 47

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binding region

<400> 47

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<210> 48

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<223> Description of Artificial Sequence: substrate
binding region

<400> 48

aatagtgagg cttg

14

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<211> 12

<212> RNA

<213> Human immunodeficiency virus type 1

<400> 49

guaacuagag au

12

<210> 50

<211> 98

<212> DNA

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<223> Description of Combined DNA/RNA Molecule:
Positions 7-18 is RNA; the remainder of the
sequence is DNA.

<220>

<223> Description of Artificial Sequence: DNA enzyme

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nnnnnnnnnn nnnnnnnnnn nnnnccgtaag cttggcac 98

<210> 51

<211> 99

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Combined DNA/RNA Molecule:
Positions 1-24 is RNA; the remainder of the
sequence is DNA.

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 51

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nnnnnnnnnn nnnnnnnnnn nnnnccgtaa gcttggcac 99

<210> 52

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 52

ccaatagtgc tactgtgtat ctcaatgctg gaaacacggg ttatctcccg 50

<210> 53

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 53

ccaaaacagt ggagcattat atctactcca caaagaccac ttttctcccg 50

<210> 54

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 54

atccgtacta gcatgcagac agtctgtctg ctttttcatt actcactccc 50

<210> 55

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 55

caattcatga tgaccaactc tgtcaacacg cgaactttta acactggca 49

<210> 56

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 56

cttcacctt ccgagccgga cgaagttact ttttatcaca ctacgtattg 50

<210> 57

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 57

ggcaagagat ggcatatatt caggtaactg tggagatacc ctgtctgcca 50

<210> 58

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 58

ctagaccatt cacgtttacc aagctatggt aagaactaga atcacgcgta 50

<210> 59

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 59

cgtaacacgtg gaaaagctat aagtcaagtt ctcacatgt acctgaccgc 50

<210> 60

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

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<210> 61

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

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accgaattaa actaccgaat agtgtgggtt ctatgcttct tcttcctga 50

<210> 62

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<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

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<210> 63

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<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

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<210> 64

<211> 49

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

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<210> 65

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<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

<400> 65

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<210> 66

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 66

cacaacgaaa acaatcttcc ttggcatact ggggagaaaag tctgttgtcc 50

<210> 67

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 67

cacacgaaca tgtccattaa atggcattcc gtttttcggtt ctacatatgc 50

<210> 68

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 68

cagaacgagg gtcttgtaag actacacctc ctcagtgaca ataatcctg 49

<210> 69

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 69

cactacagcc tgatatatat gaagaacagg caacaagctt atgcactgg

49

<210> 70

<211> 50

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

<400> 70

gggtacattt atgattctct tataaagaga atatcgact cttttcccca

50

<210> 71

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 71

ccaaagtaca ttccaacccc ttatacgtga aacttcagat agtttccta

49

<210> 72

<211> 50

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

<400> 72

cttgaagatc ctcataagac gattaa^{*}acaa tccactggat ataatccgga

50

<210> 73

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 73

cgaatagtgt ccatgattac accaataact gcctgcctat catgtttatg 50

<210> 74

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 74

ccaagagagt atcggatata cttggaacat agctaactcg aactgtacca 50

<210> 75

<211> 48

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

<400> 75

ccactgataa ataggtaact gtctcatatc tgccaatcat atgccgta 48

<210> 76

<211> 50

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

<400> 76

cccaaattat aaacaattta acacaagcaa aaggagggttc attgctccgc 50

<210> 77

<211> 50

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

<400> 77

caataaactg gtgctaaacc taataccttg tatccaagtt atcctccccc

50

<210> 78

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 78

ccgaatgaca tccgtagtgg aaccttgctt ttgacactaa gaagctacac

50

<210> 79

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 79

ccataacaaa taccatagta aagatctgca ttatattata tcggtccacc

50

<210> 80

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 80

cagaacaaag atcagtagct aaacatatgg tacaacata ccatctcgca

50

<210> 81

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 81

cctttagtta ggctagctac aacgattttt ccctgcttgg caacgacac

49

<210> 82

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 82

ctccctacgt tacaccagcg gtacgaattt tccacgagag gtaatccgca

50

<210> 83

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 83

cggcacctct agttagacac tccggaattt ttcccc

36

<210> 84

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 84

cggcacctct agttagacac tccggaattt tagcctacca tagtccggt

49

<210> 85

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 85

ccctttgggtt aggctagcta caacgatttt tccctgcttg aattgta

47

<210> 86

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 86

ccctttgggtt aggctagcta caacgatttt tccctgcttg acctgttacg a

51

<210> 87

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 87

cctttagtta ggctagctac aacgattttt ccttgcttgg aacgacac

48

<210> 88

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 88

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50

<210> 89

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 89

caacagagcg agtatcacc cctgtcaata gtcgtatgaa acattgggcc

50

<210> 90

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 90

taccgacaag gggaattaaa agctagctgg ttatgcaacc cttttcgca

49

<210> 91

<211> 49

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

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<210> 92

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<223> Description of Artificial Sequence: DNA enzyme

<400> 92

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<210> 93

<211> 50

<212> DNA

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<223> Description of Artificial Sequence: DNA enzyme

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<210> 94

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 94

gcaacaacaa gaaccaagtt acatacacgt tcatctatac tgaacccccca 50

<210> 95

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 95

cctttgagtt cctaaatgcc gcacggtaag cttggcacac tttgactgta 50

<210> 96

<211> 49

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

<400> 96

caaagatctc acttttgaaa tgcgaaatat gtatattcgc cctgtctgc 49

<210> 97

<211> 50

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: DNA enzyme

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ccacgtagaa ttatctgatt tataacataa cgcaggataa ctctcgccca 50

<210> 98

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<223> Description of Artificial Sequence: DNA enzyme

<400> 98

cacaagaaag tgtcgtctcc agatatttga gtacaaggaa ctacgccc 48

<210> 99

<211> 50

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<223> Description of Artificial Sequence: DNA enzyme

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catgaagaaa taggacattc tacaggctgg accgttacta tgcctgtagg 50

<210> 100

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 100

cataggataa tcatggcgat gcttatgacg tgtacatcta tacctt 46

<210> 101

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 101

cagatgatct tcctttaag actacccttt aaagaaacat aaggtacccc 50

<210> 102

<211> 17

<212> RNA

<213> Human immunodeficiency virus

<400> 102

ggagagagau gggugcg 17

<210> 103

<211> 15

<212> RNA

<213> Human immunodeficiency virus

<400> 103

gagagagaug ggugc 15

<210> 104

<211> 17

<212> RNA

<213> Human immunodeficiency virus

<400> 104

caguggcaau gagagug 17

<210> 105

<211> 15

<212> RNA

<213> Human immunodeficiency virus

<400> 105

aguggcaaag agagu 15

<210> 106

<211> 17

<212> RNA

<213> Human immunodeficiency virus

<400> 106
gaggauagau ggaacaa 17

<210> 107
<211> 15
<212> RNA
<213> Human immunodeficiency virus

<400> 107
aggauagaug gaaca 15

<210> 108
<211> 15
<212> RNA
<213> Human immunodeficiency virus

<400> 108
gcaagaaug gagcc 15

<210> 109
<211> 15
<212> RNA
<213> Human immunodeficiency virus

<400> 109
cuauaagaug gguga 15

<210> 110
<211> 20
<212> RNA
<213> Feline infectious peritonitis virus

<400> 110
uacagcaaca uggggaaugg 20

<210> 111
<211> 18
<212> RNA
<213> Feline infectious peritonitis virus

<400> 111
cauggggaau ggacaggg 18

<210> 112
<211> 23
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 112
caaauaaaag ggaugaaguc ugg 23

<210> 113
<211> 21
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 113
aaggaaugaa gucuggcucc g 21

<210> 114
<211> 23
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 114
auaccgcaaa gucuugaga auu 23

<210> 115
<211> 23
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 115
aagucuuga gaguuuccug cac 23

<210> 116
<211> 19
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 116
aacaccacca uguccagcc 19

<210> 117
<211> 20
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 117
ggccuuucac auuguaccgc 20

<210> 118
<211> 21
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 118
uuguaccgca ucgauaucca c 21

<210> 119
<211> 23
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: RNA

<400> 119
gaacauuaca uuauagugac cag 23

<210> 120
<211> 14
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA enzyme

<400> 120
tccgagccgg acga 14

<210> 121
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA enzyme

<400> 121
rggctagcta caacga 16

<210> 122
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: DNA enzyme

<220>
<221> misc_feature
<222> (9)
<223> H = T, C or A

<400> 122
rggctagcha caacga 16

<210> 123
<211> 79
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<220>

<221> misc_feature

<222> (18)

<223> The N at position 8 is adenosine ribonucleotide.

<400> 123

ctaatacgac tcactatngg aagagatggc gacatctctt cagcgatgca cgcttgtttt 60
aatgttgcac ccatgtagg 79

<210> 124

<211> 75

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 124

gtgccaaagct taccgagtaa cttcggtccgg ctcggragat gggtcgtctg tccttccatc 60
tctagttact ttttc 75

<210> 125

<211> 78

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 125

gttgccaagc ttaccgggaa aaatcgttgt agctagccta actaggctgt ctgtccttcc 60
atctctagtt actttttc 78

<210> 126

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 126

ggaaggacag acgacccatc

20

<210> 127

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 127

gtgccaagct taccgggaaa aa

22

<210> 128

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 128

ggaaggacag acgacctagt t

21

<210> 129

<211> 34

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 129

gaaaaagtaa ctagagatgg aaggacagac gacc

34

<210> 130

<211> 80

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 130

cacggttcga atggcgttat gcatcacact atttttcatt gaagcaggcc gagccttcca 60
ccttcacg cg gtagagaagg 80

<210> 131

<211> 77

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: DNA enzyme

<400> 131

cacggttcga atggcatgtt aagttcgtcc ctttttagca acatcgatcg gattggtttc 60
cccagcggtg gagaagg 77